

MAINTENANCE ACTIVITY LIST AND RESPONSIBILITY ALLOCATIONS

Using the Data in Activity List

The following sheets contain data that illustrate how to determine several factors with regard to maintenance of a transportation facility that is covered in an IGA or JPA. For the purpose of illustration, there are a number of sheets that comprise the various categories of maintenance that are covered by the accompanying agreement and the various columns within the sheets explain various aspects of each maintenance activity for each maintenance program

The programs that may be included in this agreement are:

- 100 pavement surface
- 120 unpaved surface
- 130 shoulders
- 150 roadside
- 160 drainage
- 170 snow and ice
- 180 major weather
- 190 bluestake and encroachment permits
- 300 landscape/urban
- 400 signing and striping
- 510 traffic signals and lighting
- 540 tunnel maintenance
- 1000 artistic/requested enhancements

Each program covers a separate series of maintenance activities that encompass generalized types of work. Within each sheet are a series of columns that define the maintenance work activity in certain specific ways. The SERIES column defines the maintenance work number using the State of Arizona Maintenance work activity number. The ACTIVITY DEFINITION explains which activity is being considered. The MAINTENANCE THRESHOLD explains when a governmental entity (local or state) should perform the defined activity. The next three columns (CREW #, EQUIP#, MATERIAL) explain some general quantities that the state uses to determine the potential level of effort to accomplish the stated activity. The next two columns are the ones that define who is to perform which activity and at what level of effort. These columns (QUANTITY LOCAL GOV/ROUTINE and QUANTITY STATE/NON-ROUTINE) show when the activity should be performed by either the local government (defined as the routine work) and the State (defined as the non-routine work). The information in the columns is self explanatory except for a few terms which should be defined. For maintenance purposes, a lane-mile is 12 feet wide by one mile long. (This may vary in the field but is a nominal value). Other terms are basic engineering terms and abbreviations such as CY means cubic yard. Most of the other terms are straight forward. The use of the Boolean operators > means "greater than" and < means "less than" and of course = means "equals".

MASTER MAINTENANCE JPA/IGA ACTIVITIES				PROGRAM 100 -- Pavement Surface			
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
101	Patch with Premix (potholes)	Potholes Occur during Bad Weather	6	13	1 to 4 cubic yards	All	N/A
102	Level with Premix	Distortions/Ruts > 1.25"	7	12	Cubic Yards/max \$50,000 p/project	< 300 feet x Width	> 300 Feet
103	Fill Cracks	Cool Weather/When Cracks are Noticeable	6	10	50 to 150 gallons	All	N/A
104	Sand Seal Coat (major)	Slippery/Bleeding Pavement	17	17	12 ft. Lane Miles/max \$50,000 p/project	< (2) 12' Lane Miles	> (2) 12' Lane Miles
105	Replace Surface/Base	Pavement Damage is Safety Hazard	7	17	10 to 80 Cubic Yards	< 200 Sq. Ft Surface	> 200 Sq. Ft Surface
106	Chip Seal Coat (major)	Cracked/Slippery/Bleeding	17	18	12 ft. Lane Miles/max \$50,000 p/project	< (2) 12' Lane Miles	> (2) 12' Lane Miles
107	Seal Coat (minor)	Area Shows Local Deterioration	12	16	Tenths of a Mile/max \$50,000 p/project	< (2) 12' Lane Miles	> (2) 12' Lane Miles
108	Flush Coat	Every 3 Years or When Pavement Surfaces	9	14	4 to 15/12' Lane Miles	All	N/A
109	Spot Flush/Seal Coat	3' Area of Pavement Oxidized	7	13	200 to 1,200 Gallons	< 300 Feet x Width	> 300 Feet x Width
111	Emergency Patch with Premix	During Bad Weather and/or Safety Hazard	4	4	1 to 3 Cubic Yards	All	N/A
112	Tight Blading	For Raveled And Cracked Pavement	7	9	15 to 100 Cubic Yards	< 300 feet x Width	> 300 feet x Width
113	Fill Cracks w/Asph-Rub Sealant	When Cracks > 3/8" Width	8	8	800 to 2,500 Pounds	All	N/A
114	Repair/Replace PCC Pavement	Spalls/Cracking > 5%	8	11	3 to 7 Cubic Yards	N/A	All
115	Spall Repair of PCC Pavement	> 5% Spalled or Safety Hazard	6	8	4 to 10 Gallons	N/A	

MASTER MAINTENANCE JPA/IGA ACTIVITIES				PROGRAM 120 -- Unpaved Surface			
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
121	Blade Unpaved Roads	When Rutted/Washboards	2	6	2 to 7 Road Miles Bladed	All	N/A
122	Spot Recondition Unpaved Roads	When Holes/Low spots Occur	6	10	130 to 400 Cubic Yards	< 10 Yards	> 10 Yards

MASTER MAINTENANCE JPA/IGA ACTIVITIES				PROGRAM 130 -- Shoulders			
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
131	Blade Unpaved Shoulders	When Rutting >1.5"	3	7	1 to 6 Shoulder Mile (12-ft wide)	All	N/A
132	Repair Unpaved Shoulders	When Washout Noticeable Erosion Occurs	7	13	40 to 250 Cubic Yards	All	N/A
133	Repair Shoulders Behind Guardrail	When Washout Noticeable Erosion Occurs	7	10	30 to 150 Cubic Yards	All	N/A
134	Maintain Unpaved Turnouts & Crossovers	Rutted, Washboard, Drop-off	7	13	20 to 100 Cubic Yards	All	N/A
135	Flush Shoulder Edge	When Shoulder Edge Oxidized	7	13	200 to 1,200 Gallons	All	N/A

MASTER MAINTENANCE JPA/IGA ACTIVITIES				PROGRAM 150 -- Roadside			
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity	Quantity
						Local Gov/Routine	State/Non-Routine
1500	Accident Repair	When Accident Occurs	varied			All	N/A
1501	Full-Width Litter Pick-up	Urban/Weekly;Rural/Monthly	2	2	0.5 to 4 R/W Miles	All	N/A
1502	Spot Litter & Debris Pick-Up	When Complaint Occurs/Callout	2	2	N/A	All	N/A
1503	Accident Guardrail Repair	When Damaged	5	10	3 to 7 Guardrail Panels	All	N/A
1504	Annual Fence Maintenance	Annually	2	2	50 - 150 Fence Miles	All	N/A
1505	Routine Fence Maintenance	When Damage Occurs	2	8	5 to 50 Fence Panels	All	N/A
1506	Cattle Guard Maintenance	When Damage Occurs	3	7	1 to 10 Grills Serviced	All	N/A
1507	Mechanical Sweeping	Once/Month Urban	2	9	3 to 20 Pass Miles	All	N/A
1508	Truck Escape Ramp Maintenance	When Damaged	2	8	N/A	N/A	All
1509	Tri-Cable Barrier Repair	When Damage Occurs	5	7	2 to 12 Panels	N/A	All
1510	Accident - Chain Link Fence Repair	When Damage Occurs	3	7	3 to 15 Fence Panels	All	N/A
1511	Accident - Barbed Wire Fence Repair	When Damage Occurs	2	8	3 to 25 Fence Panels	All	N/A
1512	Routine Guardrail Repair	When Damage Occurs	5	10	3 to 7 Guardrail Panels	All	N/A
1520	Crash Attenuator (Guardrail)Repair - Accident	When Damage Occurs	6	9	1 to 10 Panels	All	N/A
1590	Graffiti	When it Occurs	varied	varied	varied	All	N/A

MASTER MAINTENANCE JPA/IGA ACTIVITIES				PROGRAM 160 -- Drainage			
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
1601	Routine Drainage Maint (and catch basins)	Function Impeded	3	10	1 to 30 Openings	All	N/A
1602	Emergency Drainage Maintenance	During Weather Events	3	12	1 to 30 Openings	All	N/A
1603	Clean Cuts/Channel/Dikes	Function Impeded	7	11	500 to 5,000 Lineal Feet	All	N/A
1604	Minor Slide Removal	Function Impeded	6	8	1 to 10 Slide Areas	All	N/A
1605	Routine Major Structure Maintenance	By Inspection	4	13	1 to 5 Structures	N/A	All
1607	Storm and Rock Patrol	During Weather Events	2	3	50 to 250 Road Miles Patrolled	All	N/A
1608	Drainage Inspection	Annually	2	1	20 to 50 Openings	All	N/A
1610	Rdwy Pump Preventative Maint. Inspection	State Standards	2	6	1 to 4 Units	N/A	All
1611	Rdwy Pump Station/Troubleshooting & Repair	State Standards	3	5	1 to 2 Station Components	N/A	All

MASTER MAINTENANCE JPA/IGA ACTIVITIES				PROGRAM 170 -- Snow & Ice			
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
171	Plow Snow and/or Apply Abrasives/De-Icer	Weather Event	1	11	80 to 250 Miles//20 to 60 Miles (Graders)	All	N/A
172	Winter Storm Patrol	Weather Event	1	2	80 to 160 Miles Patrolled	All	N/A
173	Spot Ice Control	Weather Event	1	7	1 to 20 Miles Treated	All	N/A
179	Other Snow & Ice Control	Weather Event	varied	varied	varied	All	N/A

MASTER MAINTENANCE JPA/IGA ACTIVITIES			PROGRAM 180 -- Major Weather				
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
180	Major Damage & Disaster Maintenance	When Notified	varied	varied	varied	If Available	All

MASTER MAINTENANCE JPA/IGA ACTIVITIES					PROGRAM 190 --Bluestake & Encroachment Permits		
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
191	Bluestake & Encroachment Permit	Routine for Permits Within 48 Hours Blustake	1	2	N/A	Bluestake	Permits

MASTER MAINTENANCE JPA/IGA ACTIVITIES				PROGRAM 300 - Landscape/Urban			
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
311	Trim Trees	1 Tree	2	3	20 to 100 Trees	For Appearance/Safety	N/A
314	Replace Trees	1 Tree	2	3	3 to 12 Trees	Dead Trees/Accident Repair	N/A
315	Remove Trees	1 Tree	2	4	3 to 10 Trees	Dead/Damaged/Clear Zone/ Sight Distance/Sign Visibility	N/A
321	Trim Shrubs/Groundcover	10 Shrubs	2	3	100 to 500 Plants	Aesthetics/Sight Distance/Sign Visibility	N/A
323	Replace Shrubs/Groundcover	10 Shrubs	2	4	20 to 75 Shrubs	Aesthetics/Citizen Complaints	N/A
324	Remove Shrubs/Groundcover	10 Shrubs	3	5	20 to 200 Shrubs	Dead/Sight Distance/ Encroachment	N/A
333	Irrigation Repair	1 Repair	2	3	N/A	If Broken/Damaged	N/A
341	Granite Erosion Control	If Spills into Road/Sidewalk	2	5	1 to 20 Tons	If Eroded	N/A
343	Non-Granite Erosion Control	If Spills into Road/Sidewalk	2	4	1 to 20 Cubic Yards	If Eroded	N/A
351	Herb Veg Ctrl - Swath Application Treatment	As Needed	1	4	6 to 15 Acres	Before & After Weeds Appear	N/A
353	Herb Veg Ctrl - Spot Application Treatment	As Needed	2	2	1 to 10 Acres	Before & After Weeds Appear	N/A
355	Landscape Rodent Control - Chemical	Large Population	2	2	4 to 20 Acres	Citizen Complaint	N/A
363	Manual Weed Control	3" Height or Greater	2	2	N/A	When Weeds Appear	N/A

MASTER MAINTENANCE JPA/IGA ACTIVITIES				PROGRAM 400 -- Signing & Striping			
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
401	Maintain Delineators	20% missing/Damaged	1	3	40 to 80 Delineators	All	When Repaved
402	Paint Guidelines (Small Striper)	Paint Once Annually	5	6	100 to 300 Gallons	All	N/A
403	Special Pavement Marking	Every 2 Years	3	6	150 to 400 Sq. Feet	Median Noses/Symbols/ Crosswalk	During Reconstruction
404	Sign Work Order	Substandard/Damaged	1	2	30 to 100 Sq. Feet	All < 32 sq. feet	All > 32 sq. feet
405	Inspection, Signs/Pavement Marking	Every 6 Months	2	2	100 to 300 Miles	??	Special Only
406	Sign Maintenance	Once Annually	2	4	30 to 100 Sq. Feet (of signs worked on)	All < 32 sq. feet	All > 32 sq. feet
407	Pavement Preparation	Prior to Striping	3	6	50 to 2,000 Linear Feet	All	During Reconstruction
408	Raised/Recessed Pavement Marking	Every 2 Years	5	8	100 to 200 Pavement Markers	All	During Reconstruction
409	Other Traffic Maintenance	As Needed	varied	varied	varied	All	Special Only
421	Statewide Stripe Inspection	Annually	2	2	150 to 225 Driving Inspection Miles	All in Local Jurisdiction	N/A
422	Guideline Painting (Lg. Striper) Tucson Crew	Annually	6	10	400 to 700 Gallons (of Paint)	N/A	N/A
423	Guideline Painting (Lg. Striper) Holbrook Crew	Annually	6	10	400 to 700 Gallons (of Paint)	N/A	N/A
425	Guideline Painting (Lg. Striper) Phoenix Crew	Annually	6	10	400 to 700 Gallons (of Paint)	Once Annually	Special Only
450	Accident Interstate Sign Repair/Replacement	As Needed	3	6	40 to 250 Sq. Feet (of signs)	All	All > 32 sq. feet
451	Interstate Sign Inspection	As Needed	2	2	40 to 1,000 Signs	N/A	All
452	Interstate Sign Repair	As Needed	3	6	275 to 375 Sq. Feet (of signs repaired)	N/A	All
454	Interstate Night Sign Inspection	Annually	2	2	600 to 2,000 Signs	N/A	All
456	Wash Interstate Signs	Annually	2	3	200 to 800 Sq. Feet	N/A	All
458	Install Interstate Signs	Annually	3	6	100 to 500 Sq. Feet (of signs installed)	N/A	All
459	Other Interstate Sign/Stripe Maintenance	Annually	varied	varied	varied	N/A	All

MASTER MAINTENANCE JPA/IGA ACTIVITIES

PROGRAM 510 -- Traffic Signals & Lighting

Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity	Quantity
						Local Gov/Routine	State/Non-Routine
5102	Routine Signal/Lighting Maint/Inspection	Call Box Locations(Monthly);Ramp Metering, signals & Bus Stop Locations(every 3months); Flashers & Lighting Locations(twice yearly);lighting locations(Annually)	1	2	Call Boxes: 4-6 Units/Traffic Signals: 2-4 Maint. Units/ Lighting:3-5 Maint Units/Bus Stops: 8-10 Units/Loop Repairs: 1-6	All	N/A
5103	Routine Variable Msg Sign Maint/Inspection	Minor(2.5 hours per unit): Every 6 Months/Major (5 hours per unit): Every 12 Months	3	3	1-2 Maintenance Units	All	N/A
5104	Routine Veh. Loop Monitor Sys Maint/Insp/Rpr	Monitoring Systems - Every 4 Months	1	2	6 to 8 Features	All	N/A
5105	Coordinated Signal Systems Operations Review	Twice Annually	2	2	0.25% Coordinated System per day	All	N/A
5106	Routine RWIS Maintenance/Inspection	RWIS Every 6 months per unit	2	1	1 Maintenance Unit	All	N/A
5107	Traffic Signal Quality Control Inspection	61 Maintenance Units, 2 times per year/All Maintenance Units: Once a year	1	2	2 to 6 Maintenance Units (Per Day)	All	N/A
5108	Routine Closed Circuit Video, Maint/Insp/Rpr	Every 4 Months	2	5	4 to 6 Features	All	N/A
5110	Relamp Traffic Signals	Ambers(Incandescent):once every 4 years/Reds & Greens(LED's): Once every 6-7 Years	2	4	75 - 129 Lamps		
5111	Maintain High Mast Lighting	Once Annually	2	5		All	N/A
5117	Paint Traffic Signal/Hwy Lighting Poles	20% of Inventory Annually	2	7	2 to 7 Features	All	N/A
5122	Replace Roadway Detection	As Required	3	8	1 to 2 Loops per day	All	N/A
5126	Controller Cabinet Quality Test & Evaluation	At Construction Completion	1	N/A	0.15 to 0.35% of Cabinet	All	N/A
5130	Repair FMS Equipment	As Required	1	N/A	2 to 5 Units	All	N/A
5149	Other Traffic Signal/Lighting Activities	Varied/Twice Annually	varied	varied	varied	All	N/A
5163	Maintain Roadway Lighting Bases	Annually	1	4	30 to 70 Features	All	N/A
5171	Maintain Tunnel Lighting	Wash & Clean Fixtures: 3-4 times Annually/Relamp: twice Annually	9	5	60 to 90 Fixtures (Rural)	All	N/A
5203	Repair Traffic Signals	1.5 Hours to Respond	2	5	1 to 5 Features; repair T/S equipment; Wire F/Loops; visors; t/s signals&Backplates; t/s mounts complete;t/s & ped signal heads; ped modules; fiber optic arrow kite; t/s lenses; poles 15 feet or less; poles b,c,d,e,f,g; poles other; t/s lamps; misc.	N/A	All
5204	Repair Variable Message Sign	Earliest Opportunity After Notification	3	3	1 to 4 Features; vms control board, vms power supply, vms module, vms from panel, vms pc board	N/A	All

5205	Repair Freeway Management Equipment	Earliest Opportunity After Notification	2	2	1 to 4 Features; Transformer Cabinets, 341 control cabinets w/camera, misc.	N/A	All
5255	Repair Roadway and Sign Lighting	Earliest Opportunity After Notification	3	7	1 to 8 Features; poles 15 feet and less; poles b,c,d,e,f,g; poles other; ballasts; luminaries; lighting lamps; lighting contractor; mast arms; misc	N/A	All
5271	Restore Tunnel Lighting Outage	Debris:ASAP/Repairs:Earliest Opportunity After Notification	4	5	1 to 50 Fixtures; electrical wire, ballasts luminaries; lighting lamps, misc.	N/A	All

MASTER MAINTENANCE JPA/IGA ACTIVITIES				PROGRAM 540 -- Tunnel Maintenance (District M)			
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity	Quantity
						Local Gov/Routine	State/Non-Routine
5401	Tunnel: Weekly Scheduled Maintenance	Weekly Schedule	3	2	N/A	All	N/A
5402	Tunnel: Semi-Annual Scheduled Maintenance	Semi-Annual Schedule	3	2	N/A	All	N/A
5403	Tunnel: Emergency Repairs	When Notified	3	3	N/A	< 24 Hours Work Time	> 24 Hours Work Time

MASTER MAINTENANCE JPA/IGA ACTIVITIES					PROGRAM 1000 -- Artistic/Requested/Enhancements		
Series	Activity Definition	Maint. Threshold	Crew #	Equip #	Material (Quantity)	Quantity Local Gov/Routine	Quantity State/Non-Routine
1001	Land Form Graphic	When Eroded	varied	varied	Varied	All	N/A
1002	Upgraded/Non-Standard Item	When Oxidized/Deteriorated	varied	varied	Varied	All	N/A
1003	Artistic Enhancement	When Repairs Needed	varied	varied	Varied	All	N/A